CS 499 Milestone Two Narrative

Agnieszka Sikora

The artifact I chose for category one enhancement was created during CS330: Computational Graphics and Visualization Class. The project's goal was to recreate a 2D scene in 3D. We could choose any image we liked if it fit one of the categories provided. My scene recreation is based on the gardens at Hampton Court Palace.

I chose this artifact because it allows me to demonstrate my skills in the C++ language and OpenGL. It shows my understanding of the algorithms fundamental to graphical operations. Since I would like to work as a data analyst, demonstrating that I feel comfortable creating and manipulating graphics can give me an advantage when looking for a job. During the course, we were provided with a basic code, so the component that I contributed the most to was the SceneManager.cpp. It shows my understanding of creating the basic shapes, light sources, and applying textures.

The first improvement was to change the texture of the cone bushes. Previously, they blended with the grass, but now, with the better texture choice, they are clearly distinct in the image. I also changed the texture of the grass, which now looks more like real grass. Another improvement was adding background color, which makes the picture more realistic than when the background color was black. I also improved the lighting of the scene. I reduced the point lights from 3 to 2. The previous point lights made the scene a little bit uncomfortable, and the light was too bright. Thanks to the warm light and subtle backlight, the objects are more transparent, and the scene looks better overall. I also fixed the texture deletion by replacing glGenTextures with glDeleteTextures to free textures. In CreateGLTexture, I added a check for texture array overflow. I replaced NULL pointers with nullptr since it improves type safety and code clarity.

I did meet the planned course outcome of designing and evaluating computing solutions that solve a given problem using algorithmic principles and computer science practices and standards appropriate to its solution, while managing the trade-offs involved in design choices. So far, I don’t have any updates to my outcome-coverage plans.

Even though I didn’t have significant problems when creating the code during my original class, the enhancement part was challenging. Which, unfortunately, really puts me behind schedule. The major problem I faced was making the code work. The image would initially load, but the code had difficulties locating the correct library paths. Once I started updating the paths, the last update would usually cause the code to stop running. It took me many hours on Google to find a solution, but unfortunately, it was useless. Finally, I figured it out by trying different options in the virtual studio. I learned that the internet doesn’t have an answer to everything. Sometimes it also helps just to walk away from the code to clear your head, and sometimes it will help you find the solution.